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In 84
94

FOREST CONTROL

by

CONTINUOUS INVENTORY

"Today I have grown taller from walking with the trees."

...Karle Wilson

Milwaukee, Wis. January, 1962 No. 94

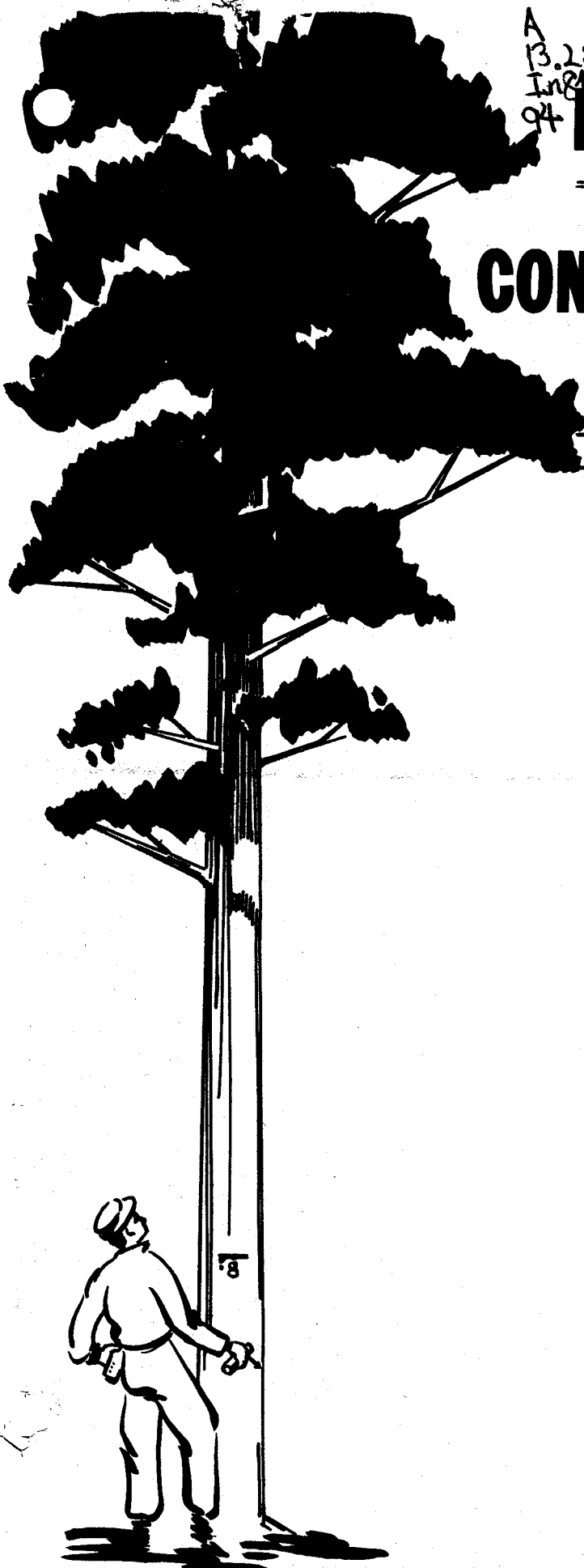
A THOUGHT FOR THE NEW YEAR

"One thing I know; the only ones among you who will be really happy are those who will have sought and found how to serve."

"In the quietness of our hearts we must be an incorruptible judge of ourselves."

Albert Schweitzer

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A SYSTEM FOR RECORDING REPRODUCTION DATA
IN CONTINUOUS FOREST INVENTORY

The Eastern Region of the Forest Service has submitted a paper for distribution with the CFI Newsletter. Prepared by William W. Barton of the Division of State and Private Forestry in Philadelphia, Pennsylvania, the article describes a plan for recording the presence of reproduction on permanent inventory plots. These forest facts may be compiled for the entire forest, and for ecological and administrative subdivisions, by data processing methods. This will provide a continuing record of the change in understory species through the years. Reproduced and interpreted into Port-A-Punch cards for each recurring measurement, this repeated record cannot help but bolster the cruiser's woods knowledge as well as provide interesting tabular information.

Identification of the various species in these immature sizes is quite difficult in forest regions with prolific numbers and varieties of commercial trees. We can only recommend careful and particular examination of these small trees. Experience and study will gradually improve the identification and increase the accuracy of the records.

In all cases, where the mil-acre quadrat line is established through the center of the permanent sample plot, the end points of the line should be permanently marked. Small aluminum pins or stakes are most satisfactory. A repeated measurement of identical quadrats is important.

CAL STOTT
Forester

A SYSTEM FOR RECORDING REPRODUCTION DATA
in
CONTINUOUS FOREST INVENTORY

Continuous Forest Inventory, with permanently-marked sample plots, offers an opportunity to secure factual data on forest tree reproduction in relation to the management treatment that is given to a particular stand. Until recently, data obtained on reproduction has been relatively skimpy; yet instances are known where this data has proven useful because it furnished some factual background.

Recently field tested is a system for recording reproduction data on CFI plots which secures data on all species instead of a chosen few and which through remeasurements will yield a detailed picture of the flow of change in reproduction as a stand develops. This system began with suggestions originating at Bowaters Mersey Paper Company in Nova Scotia, and reached its present state by the trial and error method with the latest test on J. M. Huber Corporation lands in West Virginia. The field work has proven to be more rapidly accomplished than had been anticipated.

After the individual pole and sawlog trees on the CFI plot are tallied, the plot master card is filled out. The last step is the reproduction count. The new procedure developed for this step follows:

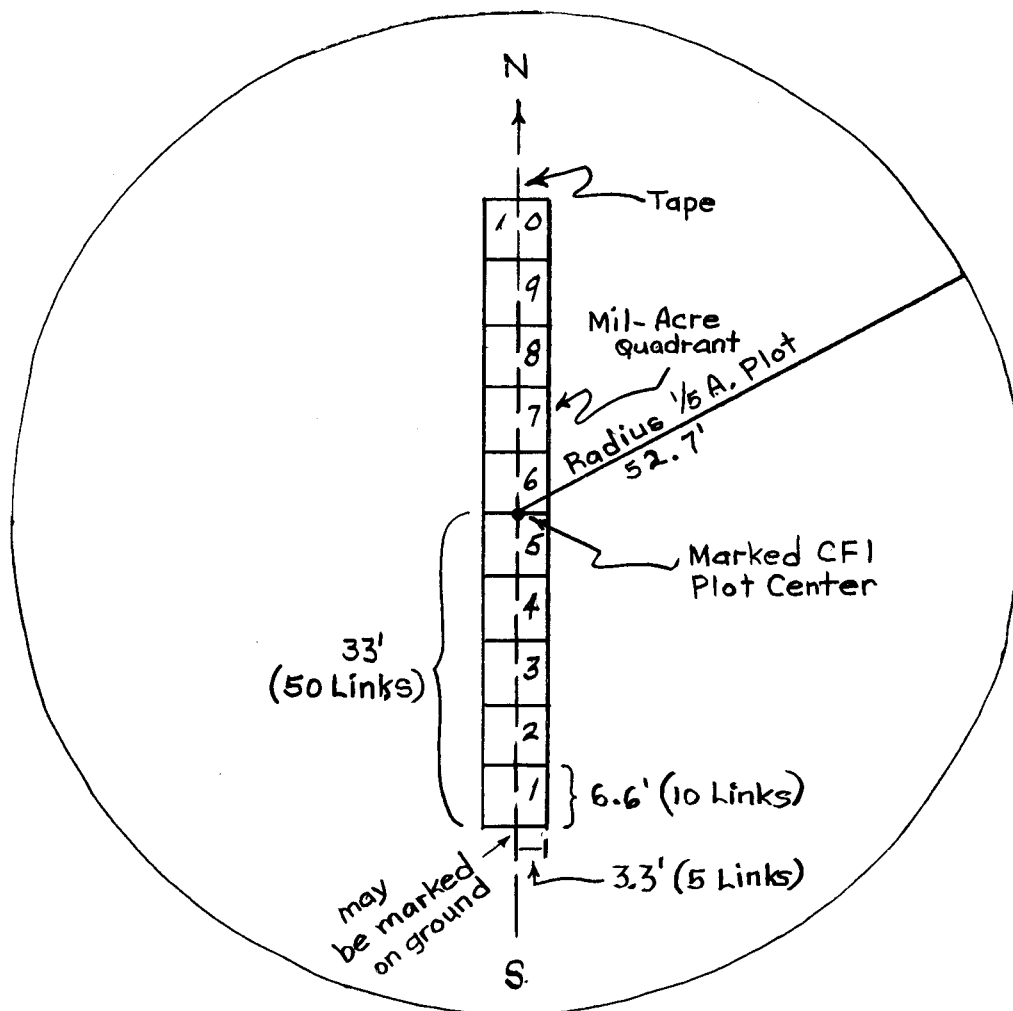
A measuring tape is stretched true north and south across the marked CFI plot center. Starting 33 feet (50 links) south of plot center and extending an equal distance north of plot center, ten square mil-acre quadrats are laid out. (See diagram on page 2.) Layout is progressive as the quadrats are examined - as explained below. To assure exact positioning of the quadrats at remeasurement times, the point 33 feet due south of the plot center may be marked on the ground.

From south to north, the individual mil-acre quadrats are numbered from 1 to 10. Each quadrat has a correspondingly numbered 2-digit field on the Port-A-Punch reproduction card. (See page 3.) If there is room, the 20 columns for recording reproduction may be placed on the plot master card.

Starting at the south, using two sticks cut to 6.6 feet (10 links) and marked at the center for lay on the tape, the first mil-acre quadrat is outlined. It is examined to determine if there is any tree in the reproduction-sapling size-class dominating this square. The tree must be of good form and vigor. If there is a tree with a future, its species code is entered in the first 2-digit field (mil-acre #1) in the Port-A-Punch card. If there is no good tree in quadrat #1, 00 is recorded.

To obtain a real picture of the situation, it is important that the dominating tree, regardless of species, be recorded. Subsequent remeasurements will show whether important or unimportant species are taking over. No tree should be recorded unless it has definite tree potential. Mats of "brush" are not well enough defined to be recorded. If one tree in a mat of brush eventually takes over, it will be caught in the record of a future remeasurement of the plot.

Reproduction Mil-Acre Layout



- (1) Stretch a tape exactly north or south across the marked plot center.
- (2) Use this tape as a center line for 10 square mil-acre quadrats, five south and five north of plot center.
- (3) Beginning at the south end (33 feet or 50 links south of plot center) examine each reproduction mil-acre quadrat. Quadrats are numbered from south (#1) to north (#10).
- (4) Assign the first mil-acre quadrat to the seedling or sapling of good form and vigor, if any, which is holding the dominant position in it.
- (5) Punch code number for this species in the corresponding mil-acre quadrat 2-digit field in the card. If no seedling or sapling qualifies, punch 00.
- (6) In similar manner, proceed with examination and recording for mil-acre quadrats #2 through #10.
- (7) The same quadrat layout is used at each remeasurement time so that detailed changes in reproduction pattern may be measured.

CFI PLOT NUMBER	REPRODUCTION QUADRAT NUMBER									
	1	2	3	4	5	6	7	8	9	10
0 0 0 0 0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
2 4 6 8 10 12	14 16	18 20	22 24	26 28	30 32	34 36	38 40	42 44	46 48	50 52
1 1 1 1 1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
2 2 2 2 2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2
3 3 3 3 3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3
4 4 4 4 4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4
5 5 5 5 5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5
6 6 6 6 6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6
7 7 7 7 7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7
8 8 8 8 8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8

Record
Species Code
or 00
For
Each
Quadrat

Use as many columns as needed

557
Interpreter
Line

To outline quadrat #2, the 6.6 foot cross-stick farthest south is jumped over the stick outlining the north side of the first quadrat, to the position on the north side of the second quadrat. The second quadrat is now examined and the data is recorded in the corresponding field in the Port-A-Punch card. In similar manner, the work continues until all 10 mil-acre quadrats have been covered.

Remeasurements will yield a detailed picture of the flow of change in reproduction. This information is needed by the forest manager to evaluate the actual results of his management techniques on the reproduction in his woodlands. Like the other measurements taken in CFI, this data will be used to set up and to modify as necessary forest management practices that will be effective in the management of specific forest lands.

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Eastern Region-Forest Service
U. S. Dept. of Agriculture
Upper Darby, Pa., 1961

QUARTERLY PROGRAM FOR CFI DATA PROCESSING AND PLANNING
REGION 9

JANUARY

- Jan. 2-5 CFI Newsletter preparation. CFI machine work, Michigan, Fuller Woods. In Milwaukee, Wisconsin.
Jan. 9-11 CFI woods and machine plans. Michigan and Wisconsin. With Gene Meyer, Marathon Corp. In Milwaukee, Wis.
Jan. 15-19 CFI machine work. Minnesota. With Clarence Eggen and Charles Bullard, U.S.B.I.A. In Milwaukee, Wis.
Also with John Arend, East Lansing Field Research Center. In Milwaukee, Wis.
Jan. 21) CFI machine work. Michigan. With Don Pallin of George Banzhaf & Co., for C.C.I. Co. In Ishpeming, Mich.
Feb. 2)

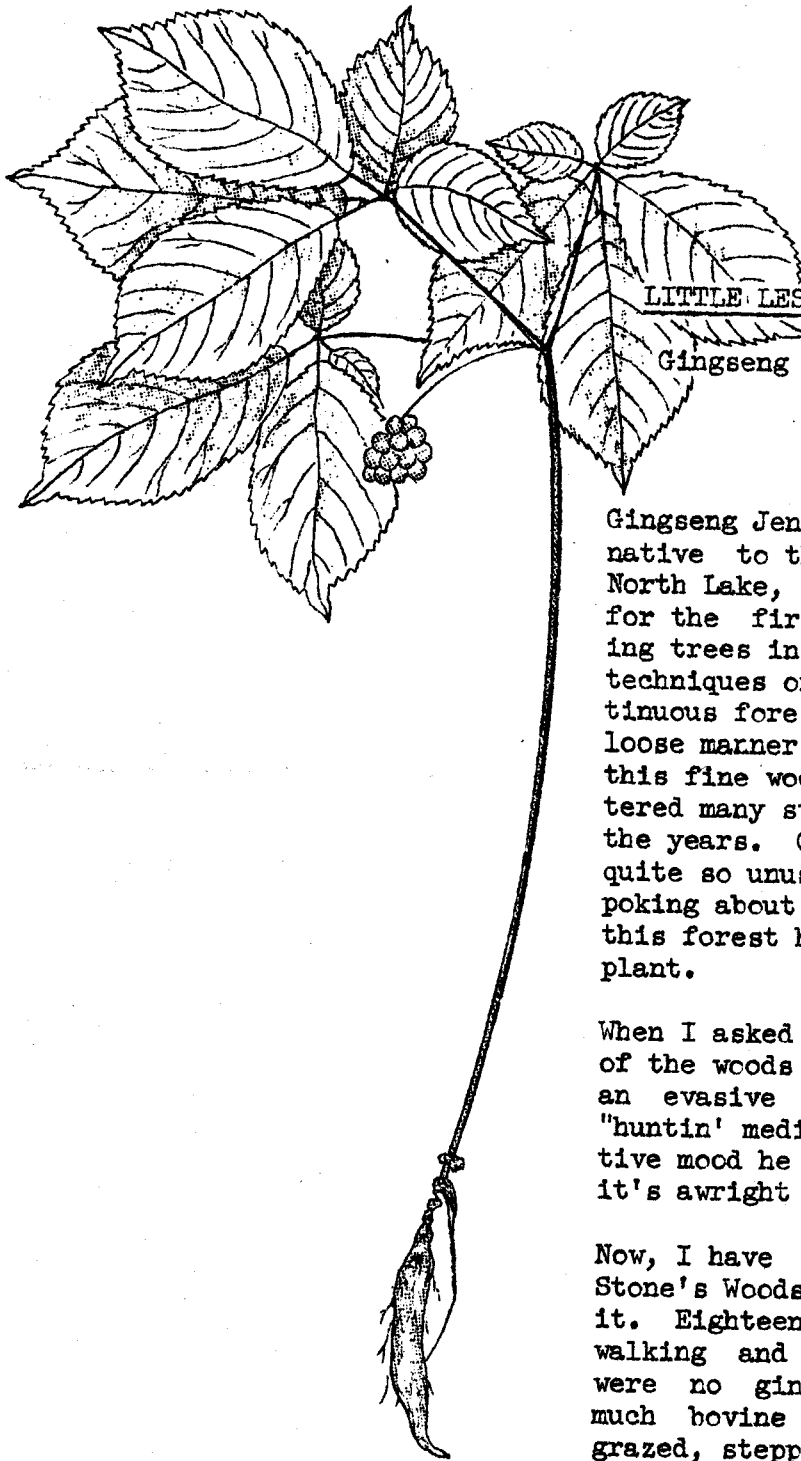
FEBRUARY

- Feb. 5-9 CFI remeasurement plans. Michigan. With Lynn Sandberg and Newman Berg, Celotex Corp. In Milwaukee, Wis.
Feb. 12-15 General data processing plans. Michigan. With Dr. Eric Bourdo, Ford Forestry Foundation. In Milwaukee, Wis.
Feb. 16 C.F.I. statistical checks, Marquette University. In Milwaukee, Wisconsin.
Feb. 19-23 CFI undergraduate school. Indiana. With Dr. Otis Hall, Purdue Univ. Forest School. In Lafayette, Indiana.
Feb. 26) CFI remeasurement plans. Missouri. With Ed Woods and Charles Kirk, Pioneer Forest. In Milwaukee, Wis.
Mar. 2)

MARCH

- Mar. 5-8 CFI data processing plans. Michigan. With Del Harma, Copper Range Co. In Milwaukee, Wisconsin.
Mar. 11-23 CFI machine work. Michigan. With Will Waara and Del Harma, Copper Range Co. In Calumet, Michigan.
Mar. 26-29 Industrial seminar. Wisconsin. With industrial foresters. Topic, Management of Northern Hardwoods.
In Trees for Tomorrow Camp, Eagle River, Wisconsin.

Cal Stott
Dick Smith
Foresters



LITTLE LESSONS IN RESOURCE REHABILITATION

Gingseng Jensen Digs for Christmas Money

Gingseng Jensen and Stone's Woods both are native to the Kettle Moraine country near North Lake, Wisconsin. I met the former for the first time this year while measuring trees in the latter. Many of the finer techniques of Region Nine's industrial continuous forest inventory system were, in a loose manner of speaking, born and bred in this fine woods. Here, too, I have encountered many strange phenomena of nature over the years. Of course, not one of them was quite so unusual as Gingseng Jensen himself, poking about in every crack and cranny of this forest home of the mysterious gingseng plant.

When I asked Jensen what in the wide world of the woods he was looking for, he gave me an evasive answer, finally settling on "huntin' medicine". Then, in a more reflective mood he added, "Joe's my neighbor, an' it's awright with him".

Now, I have a deep and kindly feeling for Stone's Woods and the gingseng growing in it. Eighteen years ago, when I first began walking and working in this woods there were no gingseng plants. There was too much bovine competition. Cows browsed, grazed, stepped on, rubbed in and rode down every cow-high or smaller tree, shrub and herb without thorns in the place.

In 1942 a wise and thoughtful owner banned cows and other fourlegged creatures from the 48 acre tract. The area became an enclosure to livestock, and an inclosure harboring increasing numbers of the gingseng plant, favorite medicinal herb of the orientals. This year there is a great deal of it growing in a deep kettle, and even climbing up the steep slopes in the south end of the woods. The stalks are spindly and the berry-like clusters small. Many of the plants are too young to bear their red seed signals, but Jensen is a professional hunter, and he misses few of them. Even while we spoke to each other, his eyes darted about touching on every twist and turn of the terrain. Several times he dropped to his knees, whipped out a putty knife, and gouged out roots, giving me one for examination.

"Small, very small - they ain't oney half as long as they oughta be," he sadly informed me. "I can't unnerstand it, - sure takes a lotta lookin' for a pound".

The branching root stock he gave me was small and soft to the touch, and sure enough, it had that miniature cadaver-like look commonly attributed to gingseng. The leaves of the plant, with their wilting leaflets in fives, lay on the ground where they were thrown, and the red fruit clusters fell on a mat of white oak leaves where they could not germinate. I have no doubt Old Gingseng saw in my eyes that I did not wholly approve of this liquidating labor of his, for he told me as he walked away, "I never git 'em all - miss lots of 'em, and they seeds agin".

Well, Mr. Gingseng Hunter, they do seed again if you leave any to seed. They are small plants and roots now because you come here too often. I could find a pound of dried roots, too, but I would not do it the way you do.

Instead, I would mark off the woods into 5 gingseng working circles. Then I would dig only the larger plants in each working circle each year for 5 years, always replanting the seeds carefully.

If I did this I could be sure that the roots would again grow as long as my longest finger. If I did this I would get my pound of roots for Christmas money each year with far less digging and hunting, as befits the declining years of rural Gingseng Jensens everywhere.

This kind of radical reasoning never occurred to Jensen, who as he wandered away, gave me one more thought to mull over as I measured my trees.

"I go on social nex' year", he said, "an' I'll have more time fer diggin' and huntin'".

The future of gingseng as an honored member of the plant community in Stone's Woods looks very bleak indeed. No one has yet devised a social security system for the attractive little plant scientifically named *Panax quinquifolium* by the great Linnaeus of old.

CAL STOTT
Forester - Region 9
U. S. Forest Service

POLYETHYLENE SHEETS PROVING THEIR WORTH IN CFI FIELD WORK

Those who are involved in the establishment of permanent inventory plots during the cold winter months, or in rainy seasons, need protection from bad weather. The tally man in particular will do better work if adequately protected against cold, rain, snow and sleet. To this end we have secured a 9 x 9 POLYETHYLENE sheet from the Rhineland Paper Company of Rhineland, Wisconsin. Successfully used by the company during the past cruising season, this sheet is light in weight and is conveniently folded and carried in the lunch and tool pack sack where it is available at all times for inclement weather. The translucent sheet is large and stiff enough so that it may be quickly draped, igloo fashion, over the tally man. While air circulation must be assured from the bottom of the tent, it is nevertheless airtight enough to provide the note taker with a warm, dry interior. The edges of the sheet must frequently be weighted down by the outside man if the winds are high. Warmth within may be still further increased by the use of a small pocket hand warmer. On damp days a film of moisture collects within the sheet and it must be dried out thoroughly in the cabin, camp or motel at night. We have seen rainy days saved and Port-a-Punch cards well protected during the summer months with this equipment. It is a good lunch time shelter in the north country, saving the time and trouble of fire building. I am sure the ingenious cruiser will find still other uses for this tough and durable, semi-stiff sheet.

CAL STOTT
Forester



Complete cover ↓

Partial cover ↓

Hand Warmer

9x9 Polyethylene sheet folded